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REMARKS

This reply is intended as a full and complete response to the Office Action mailed on March 11, 2003. In view of the amendments and following discussion, the Applicants believe that all claims are in allowable form.

OBJECTION TO SPECIFICATION

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. Specifically, the Examiner asserts that the specification does not define the term "e-chuck" as claimed in claim 4. In response, the Applicants have amended claim 4 to recite "electrostatic chuck", replacing "e-chuck". Thus, the Applicants submit that claim 4 is now adequately supported by the specification and respectfully request that the objection to the specification be withdrawn.

OBJECTION TO DRAWINGS

The drawings are objected to as presenting matter not discussed in the specification. Specifically, the Examiner asserts that Figure 4 is not discussed. In response, the Applicants have amended the specification to clarify the presentation of Figure 4 in the drawings. Thus, the Applicants submit that the drawings are now in acceptable form and respectfully request that the objection to the drawings be withdrawn.

CLAIM REJECTIONS

A. 35 U.S.C. §112 Claim 3

Claim 3 is rejected under 35 U.S.C. §112. Specifically, the Examiner alleges that the specification do s not disclose a heating that controls the

temp rature "within each of th two of more deposition regions", as recited by claim 3. In response, the Applicants have amended claim 3 to recite a heater that controls the temperature "of the wafer support", replacing "within each of the two or more deposition regions. Thus, the Applicants submit that claim 3 is now in allowable form and respectfully request that the rejection of this claim be withdrawn.

B. 35 U.S.C. §102(b) Claims 1, 3, 5 and 6

Nath et al.

Claims 1, 3, 5 and 6 stand rejected as being anticipated by U.S. Patent No. 4,423,701, issued January 3, 1984 to *Nath et al.* (hereinafter referred to as "*Nath*"). For the reasons discussed below, the Applicants respectfully disagree with this conclusion.

Independent claim 1 recites limitations not taught, shown or suggested by *Nath*. *Nath* teaches a deposition chamber having a vertically orientated cathode that splits the chamber into two adjacent and separate deposition regions. The position of the cathode fluidly isolates the deposition regions from each other (*i.e.*, the regions are "separate and distinct"), as there are no apertures or passages through which substances may cross the cathode. A pair of substrate "guides" or supports is disposed on each side of the cathode, so that a substrate may be supported within either deposition region (or so that both regions may contain a substrate simultaneously). The pair of substrate supports consists of two channeled guides that are collinearly fixed in place within the deposition region, along a line parallel to the cathode, so that a substrate supported thereon is held in a vertical orientation (*i.e.*, the substrate is held parallel to the plane of the cathode). Thus, as the guides can not move the substrate between the deposition regions, *Nath* therefore does not teach, show or suggest a deposition chamber divided into two or more integrally connected deposition regions, the chamber having a wafer support disposed therein that is moveable between the two or more int rconn cted deposition regions, as recit d by claim 1.

Thus, th Applicants submit that independent claim 1, and claims 3, 5 and 6 that d pend therefrom, are pat ntabl over *Nath*. Accordingly, the Applicants respectfully request that the rejection to these claims be withdrawn.

C. 35 U.S.C. §103(a) Claim 2

Nath* in view of *Matsukawa et al.

Claim 2 stands rejected as being unpatentable over *Nath* in view of U.S. Patent No. 5,518,542, issued May 21, 1996 to *Matsukawa et al.* (hereinafter referred to as "*Matsukawa*"). For the reasons discussed below, the Applicants respectfully disagree with this conclusion.

The burden for establishing a prima facie case of obviousness falls on the Examiner. *See*, MPEP §2142. A basic requirement of establishing a prima facie case of obviousness is that the combination of prior art references must teach or suggest all of the claim limitations and that there must be a motivation to combine the references. *See*, §2143.

Independent claim 1, from which claim 2 depends, recites limitations not taught, shown or suggested by the combination of *Nath* and *Matsukawa*. *Nath* has been discussed above. *Matsukawa* teaches a wafer cleaning apparatus having a wafer support that is vertically moveable by a piston. As *Nath* teaches processing substrates in separate deposition regions on fixed supports, there is no motivation to combine *Nath* with *Matsukawa* in a manner that would yield the claimed invention. Therefore, *Nath* and *Matsukawa* do not, individually or in combination, teach, show or suggest a deposition chamber divided into two or more integrally connected deposition regions, the chamber having a wafer support disposed therein that is moveable between the two or more interconnected deposition regions, as recited by claim 1.

Thus, the Applicants submit that independent claim 1, and claim 2 that depends therefrom, are patentable over *Nath* in view of *Matsukawa*.

Accordingly, the Applicants respectfully request that th rej ction to this claim be withdrawn.

D. 35 U.S.C. §103(a) Claims 4

Nath* in view of *Doering et al.

Claim 4 stands rejected as being unpatentable over *Nath* in view of U.S. Patent No. 6,387,185, issued May 14, 2002 to *Doering et al.* (hereinafter referred to as "*Doering*"). For the reasons discussed below, the Applicants respectfully disagree with this conclusion.

Independent claim 1, from which claim 4 depends, recites limitations not taught, shown or suggested by the combination of *Nath* and *Doering*. *Nath* has been discussed above. *Doering* teaches an atomic layer deposition chamber in which an electrostatic chuck may be used to support a semiconductor wafer during processing. *Doering* does not teach or suggest processing a substrate in separate regions of a deposition chamber. Therefore, *Nath* and *Doering* do not, individually or in combination, teach, show or suggest a deposition chamber divided into two or more integrally connected deposition regions, the chamber having a wafer support disposed therein that is moveable between the two or more interconnected deposition regions, as recited by claim 1.

Thus, the Applicants submit that independent claim 1, and claim 4 that depends therefrom, are patentable over *Nath* in view of *Doering*. Accordingly, the Applicants respectfully request that the rejection to this claim be withdrawn.

E. 35 U.S.C. §103(a) Claims 7-9

Nath* in view of *Ovshinsky

Claims 7-9 stand rejected as being unpatentable over *Nath* in view of U.S. Patent No. 4,664,939, issued May 12, 1987 to *Ovshinsky* (hereinafter referred to as "*Ovshinsky*"). For the reasons discussed below, the Applicants respectfully disagree with this conclusion.

Independent claim 1, from which claims 7-9 depend, recites limitations not taught, shown or suggested by the combination of *Nath* and *Ovshinsky*. *Nath* has been discussed above. *Ovshinsky* teaches an apparatus for depositing alloy material upon a web of substrate material, in which conduits introduce precursor process gases into and pump exhaust gases out of a processing chamber. *Ovshinsky* does not teach or suggest processing a substrate in separate regions of a deposition chamber. Therefore, *Nath* and *Ovshinsky* do not, individually or in combination, teach, show or suggest a deposition chamber divided into two or more integrally connected deposition regions, the chamber having a wafer support disposed therein that is moveable between the two or more interconnected deposition regions, as recited by claim 1.

Thus, the Applicants submit that independent claim 1, and claims 7-9 that depends therefrom, are patentable over *Nath* in view of *Ovshinsky*. Accordingly, the Applicants respectfully request that the rejection to these claims be withdrawn.

F. 35 U.S.C. §103(a) Claims 10 and 11
Sherman* in view of *Nath

1. Claim 10

Claim 10 stands rejected as being unpatentable over U.S. Patent No. 5,916,365, issued June 29, 1999 to Sherman (hereinafter referred to as "*Sherman*") in view of *Nath*. For the reasons discussed below, the Applicants respectfully disagree with this conclusion.

Independent claim 10 recites limitations not taught, shown or suggested by the combination of *Sherman* and *Nath*. *Nath* has been discussed above. *Sherman* teaches a process of depositing a film on a semiconductor wafer in which a wafer is positioned upon a wafer support in a deposition chamber, introducing first and second reactants into the chamber to form material layers on the wafer, and repeating the introduction of gases until the desired layer thickness is achieved. *Sherman* does not teach or suggest processing a

substrate in separate regions of a deposition chamber. Th refore, *Nath* and *Sherman* do not, individually or in combination, teach, show or suggest positioning a substrate on a wafer support in a deposition chamber comprising first and second integrally connected deposition regions, the wafer support being moveable between the first and second interconnected deposition regions, as recited by claim 10.

Moreover, the combination of Sherman and *Nath* provides no motivation for an apparatus in which a single substrate may be moved between two individual deposition regions to be exposed to two different deposition gases. As discussed above, *Nath* teaches an apparatus in which a vertically orientated cathode divides a chamber into two fluidly isolated deposition regions. This configuration, and the positioning of the channeled wafer supports, makes it impossible for a substrate to be moved by the wafer supports between the two deposition regions. At most, the combination of *Nath* and *Sherman* teaches a chamber in which a wafer may be supported in one of two fluidly isolated deposition regions that is adapted to receive a number of process gases in sequence. That is, the process gases would come to the wafer, as it remains supported in place within a single deposition region. The wafer would not come to the process gases, as it is moved between various deposition regions containing various process gases.

Thus, the Applicants submit that independent claim 10 is patentable over *Sherman* in view of *Nath*. Accordingly, the Applicants respectfully request that the rejection to this claim be withdrawn.

2. Claim 11

Claim 11 stands rejected as being unpatentable over *Sherman* in view of *Nath*. For the reasons discussed below, the Applicants respectfully disagree with this conclusion.

Independent claim 10 recites limitations not taught, shown or suggested by the combination of *Sherman* and *Nath*. *Sherman* and *Nath* have been discussed above. *Sherman* and *Nath* do not, individually or in combination,

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teach, show or suggest a computer storage medium containing a software routine that, when executed, causes a general purpose comput r to control a process chamber using a layer deposition method, including the step of positioning a substrate on a wafer support in a deposition chamber comprising first and second integrally connected deposition regions, the wafer support being moveable between the first and second interconnected deposition regions, as recited by claim 11. Moreover, as discussed above, the combination of Sherman and *Nath* provides no motivation for a process or apparatus in which a single substrate may be moved between two individual deposition regions to be exposed to two different deposition gases.

Thus, the Applicants submit that independent claim 11 is patentable over *Sherman* in view of *Nath*. Accordingly, the Applicants respectfully request that the rejection to this claim be withdrawn.

NEW CLAIMS

New claims 12-19 have been added to more clearly recite aspects of the invention. The Applicants believe that no new matter has been added, and accordingly, request allowance of these claims.

CONCLUSION

Thus, the Applicants submit that all claims now pending are in condition for allowance. Accordingly, both reconsideration of this application and swift passage to issue are earnestly solicited.

If the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Keith Taboada at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

July 8, 2003
Date

Respectfully submitted,

KEITH TABOADA, Attorney
Reg. No. 45,150
(732) 530-9404

MOSER, PATTERSON & SHERIDAN, LLP
595 Shrewsbury Avenue
Suite 100
Shrewsbury, NJ 07702

Please continue to send correspondence to:

Patent Counsel
Applied Materials, Inc.
P.O. Box 450A
Santa Clara, CA 95052

CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. 1.8

I hereby certify that this correspondence is being transmitted by facsimile under 37 C.F.R. §1.8 on July 8, 2003, and is addressed to the Mail Stop FEE AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, Facsimile No: (703) 746-7239.

Signature

KEITH TABOADA
Printed Name of Person Signing

July 8, 2003
Date of signature